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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/741,672	12/19/2000	Bart Buijsse	PHQ 99-015	7057

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EXAMINER	
YUN, JURIE	

ART UNIT	PAPER NUMBER
2882	

DATE MAILED: 02/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/741,672	BUIJSSE, BART	
	Examiner	Art Unit	
	Jurie Yun	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 December 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 December 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the term "curvilinear" as claimed is not found anywhere in the specification. The closest term to this is found on page 4, line 25, where the term "elliptical cross-section" is used to describe the fluid jet depicted in Figure 1b. It is suggested to change "curvilinear" to "elliptical" to overcome this objection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-4 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hertz et al. (USPN 6,002,744) in view of Noda et al. (USPN 4,723,262) and Wang (USPN 5,044,001).

4. With respect to claims 1-3, 6, and 7, Hertz et al. disclose an X-ray microscope which includes a device for generating X-rays (see abstract), which device is provided with means for producing a fluid jet (17) having a curvilinear cross-section (a circular cross-section is "curvilinear"), and means for forming a focused beam (3) whose focus (11) is situated on the fluid jet. Hertz et al. also disclose the cross-section of the fluid jet

(17) in the direction of the focused beam (3) is smaller than that in the direction transversely thereof.

Hertz et al. do not disclose the focused beam is a beam of electrically charged particles. Hertz et al. use a laser beam. Noda et al. also teach use of a laser beam, but they also teach that an electron beam can be used as well to impinge a fluid target to produce X-rays (column 6, lines 26-36). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an electron beam instead of a laser beam in the Hertz et al. apparatus, because an electron beam would be a lot cooler temperature wise, and would result in lower operating costs and longer life of the apparatus.

Hertz et al. do not specifically disclose a lens for forming an image of an object, and an x-ray detector for detecting an image of the object, but Hertz et al. disclose use as an X-ray microscope (column 3, line 34). Wang teaches an X-ray microscope (Fig. 1) which includes a lens (7) for forming an image of an object, and an x-ray detector (22) for detecting an image of the object. It would have been obvious to one of ordinary skill in the art at the time the invention was made that the X-ray microscope taught by Hertz et al. would include a lens and an x-ray detector, because these are necessarily part of an X-ray microscope, as taught by Wang.

5. With respect to claim 4, Hertz et al. disclose the fluid jet consists essentially of liquid oxygen or nitrogen (column 5, lines 55-64).

6. With respect to claim 8, Hertz et al. disclose use as an X-ray microscope (column 3, line 34), but not as a scanning electron microscope. Wang discloses the x-ray

microscope being a scanning x-ray microscope (Fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the Hertz et al./Noda et al. apparatus as a scanning X-ray microscope, depending on the application being done, as taught by Wang.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hertz et al. (USPN 6,002,744) in view of Noda et al. (USPN 4,723,262) and Wang (USPN 5,044,001) as applied to claim 1 above, and further in view of Iketaki et al. (USPN 5,835,262).

8. With respect to claim 5, Hertz et al. in view of Noda et al. teach use of an electron beam (Noda et al., column 6, lines 26-36). However, Noda et al. do not disclose the specifics of the source of the electron beam such as by an electron gun for a cathode ray tube. However, this is well known, as taught by Wang. Wang discloses the means for producing a focused beam of electrically charged particles (9) comprises an electron gun (3) for a cathode ray tube. It would have been obvious to one of ordinary skill in the art at the time the invention was made that the beam of focused electrically charged particles is produced by an electron gun for a cathode ray tube, because this is well known in the art as taught by Wang. Wang does not disclose the X-ray microscope includes a condenser lens disposed between the fluid jet and an object to be imaged by means of the X-ray microscope. Iketaki et al. disclose a condenser lens (Fig. 7, 24) which is arranged between the target (23) and the object (27) to be imaged by means of the X-ray microscope. It would have been obvious to one of

ordinary skill in the art at the time the invention was made to further modify Hertz et al. in view of Noda et al. and Wang, to include a condenser lens arranged between the fluid jet and the object to be imaged, to obtain better imaging of the transmission X-rays. Hertz et al. disclose use of the apparatus for X-ray microscopy (column 3, line 34).

Response to Arguments

9. Applicant's arguments filed 12/7/05 have been fully considered but they are not persuasive. Applicants argue that the Hertz reference used in the rejection is a continuation of application no. PCT/SE97/000697, which is discussed in the background section of Applicant's specification, and teaches generating X-rays by way of pulsed laser plasma emission, which has a number of drawbacks, which are avoided in the invention by providing an x-ray source employing a beam of electrically charged particles instead of a laser beam. Applicants then argue that the Examiner aims to cure this defect of Hertz by citing Noda for the teaching that an electron beam can be used instead of a laser beam to impinge a fluid target to produce X-rays. Applicants argue that Noda's fluid target comprises a series of discontinuous droplets of liquid, not a continuous stream or jet of liquid. This is irrelevant, as the fluid jet was taught by Hertz et al., and Noda was only relied upon for teaching use of an electron beam instead of a laser beam. Applicants also argue that the Hertz et al. stream or jet is forced through a nozzle and has essentially the same diameter as the nozzle, and thus, the jet has a circular cross-section, not a curvilinear cross-section, as claimed by applicant. Applicants then argue that the meaning of the term "curvilinear" is clearly set forth in applicant's specification. However, this is not agreed to. The term "curvilinear" does

not appear in applicant's specification, nor is a special definition provided. Even if the term did appear in the specification, the term "curvilinear cross-section" would read on the Hertz et al. "circular cross-section." The definition for curvilinear is "consisting of or bounded by curved lines," which does not exclude a circular cross-section. A circular cross-section is bounded by curved lines. Therefore, applicants arguments are not persuasive, and the rejection is maintained.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jurie Yun whose telephone number is 571 272-2497. The examiner can normally be reached on Monday-Friday 8:30-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jurie Yun
February 6, 2006

EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER